Isolepis oldfieldiana (S.T. Blake) K.L. Wilson. Occasional in winter-wet areas.
Isolepis setiformis (S.T. Blake) K.L. Wilson Occasional in swamp.
Isolepis sp. Common in winter-wet areas.
Lepidosperma longitudinale Labill. Occasional in winter-wet areas.
Lepidosperma tenue Benth. Occurs in a winter-wet section of path on south side of island.
Schoenus rigens S.T. Blake. Grows in non-saline winter-wet depressions.
§ *Schoenus subfasciculatis* Kuek. Grows in winter-wet depressions.

RESTONIACEAE

§ *Leptocarpus aristatus* R. Br. Grows in winter-wet depressions.
Leptocarpus coangustatus Nees. Widespread and locally abundant in swamps and winter-wet depressions.

CENTROLEPIDACEAE

Aphelia cyperoides R. Br. Common in winter-wet meadows.
Centrolepis aristata (R. Br.) Roemer & Schultes. Abundant in winter-wet areas.
Centrolepis drummondiana (Nees) Walp. Common in winter-wet areas.
Centrolepis glabra (F. Muell. ex Sonder) Heiron. Common in winter-wet areas.

POACEAE

* *Aira caryophyllea* L. Common in sandy areas.
* *Avena fatua* L. Common in disturbed areas.
* *Briza maxima* L. Abundant on disturbed sandy soil.
* *Briza minor* L. Common on disturbed sandy soil.
* *Bromus diandrus* Roth. Locally common around houses.
* *Bromus hordeaceus* L. Occasional around houses.
* *Cynodon dactylon* (L.) Spreading from lawns around houses.
Danthonia racemosa R. Br. Occasional on sandy soil.
* *Ehrharta calycina* Smith. Common in sandy areas.
* *Ehrharta longiflora* Smith. Common in shady disturbed sandy soil.
* *Hordeum leporinum* Link. Occasional on disturbed sandy soil at western end of island.
* *Lagurus ovatus* L. Very common in sandy areas.
* *Lolium perenne* L. Common around houses at eastern end of island.
* *Lolium rigidum* Gaudin. Occasional around houses at eastern end of island.
Microlaena stipoides (Labill.) R. Br. Occasional in sandy areas.
* *Pennisetum clandestinum* Hochst. ex Chiov. Occasional around houses.
* *Piptatherum miliaceum* (L.) Cosson. Occasional on disturbed channel bank near houses.
* *Poa annua* L. Common around houses.
* *Polypogon monspeliensis* (L.) Desf. Occasional in disturbed wet areas.
* *Sporobolus virginicus* (L.) Kunth. Occasional on salt flats.
* *Stenotaphrum secundatum* (Walter) Kuntze. Occurs around houses.
Stipa campylachne Nees. Occasional on winter-wet sandy soil.
Stipa compressa R. Br. Uncommon on sandy soil.
Stipa flavescens Labill. Uncommon on sandy soil.
* *Vulpia myuros* (L.) C. Gmelin. Occasional around houses.

ANNOTATED LIST OF THE BIRDS OF DORRE ISLAND

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ABSTRACT

Twenty six species of birds were recorded on the island, including 7 new species, in October 1988. All new species, except the Bush Stone-curlew and Red-capped Plover are summer migrants to Australia. A total of 31 species (22 non-passerines and 9 passerines) have now been recorded on the island over the past 80 years.

Of the five vegetation types on the island, the tall scrub community supports the highest diversity of terrestrial species. In the other four vegetation types, most species appear to be restricted to areas where tall shrubs occur. Only the Calamanthus, Welcome Swallow and Richard's Pipit, appear not to require at least some tall shrubs.

INTRODUCTION

Dorre Island (25.09 S, 113.37 E) is one of a chain of islands at the north-western extremity of Shark Bay, which includes Dirk Hartog and Bernier Islands. It became separated from Dirk Hartog Island and the mainland approximately 8000 yrs ago, and separated from Bernier Island about 6000 yrs ago (Fraser 1962). Along with Bernier, Dorre Island was used as a hospital for Aboriginals until 1918, but since then has been uninhabited (Fraser 1962). Both islands are now A class Nature Reserves.

Dorre Island is approximately 30 km long and up to 3.6 km wide, and is dominated by low vegetation. Five vegetation types are described by Short and Turner (1992). *Triodia* grassland *(T. plurinervata)* covers an extensive part of the island north of White Beach. This grassland is dotted with thickets of taller shrubs and stunted *Eucalyptus obtusiflora.* "Tall scrub" is restricted to consolidated sand dunes, mainly along the western side of the island. It tends to be taller and denser in the swales between dunes. "Low heath" is restricted to the south of the island on exposed sandplain. The "coastal complex" is a shrub community generally less than 0.5 m (taller in dune swales), found on unconsolidated sand dune systems. "Travertine" occupies a strip of area along the western coast of the island, with a major inland extension in the south. It consists of low open heath with screens of tall shrubs surrounding sheets of rock face or in isolated pockets of deeper soil.

G.C. Shortridge collected on Bernier Island in 1906 (Mees 1962), but Dorre Island remained ornithologically unexplored until Lipfert (1910) visited both Dorre and Bernier Islands during August and September (Mees 1962). A second more extensive survey was then conducted by the "Bernier and Dorre Expedition" in mid-June 1959 (Mees 1962). This expedition produced an extensive list of the birds. However, their searches were restricted to the north end of the island.

This paper gives details of a survey conducted between 5 and 17 October 1988. The island was surveyed using 6 randomly selected sets of 4 east/west transects 0.5 km apart, which traversed the island from coast to coast. Observtions along the coasts between these transects were also made. The transects failed to cover the northern and southern tips of the island. On each transect birds were recorded in each of the major vegetation types.

ANNOTATED SPECIES LIST

The nomenclature used in this list follows Storr and Johnstone (1979).

PIED CORMORANT *Phalacrocorax varius.* Very common. Three roosting sites on the east coast contained approximately two hundred birds each, and a fourth site that extended for approximately 1.5 km along the east coast opposite Cliff Point, held approximately 1500 to 2000 birds. Single birds were seen feeding in the open ocean between the island and Carnarvon, and they appeared to use the island as a staging place for foraging in this area. Despite the large numbers present on the island no evidence of breeding was found and the breeding record of Lipfert (1910) needs confirmation.

EASTERN REEF HERON *Egretta sacra.* Uncommon. Mainly in tidal pools. The grey phase was more common than the white. Storr (1985) noted that the

white phase is rare in the Gascoyne region and had no reports of it on Dorre Island, though it has been found on both Bernier and Dirk Hartog Islands.

OSPREY *Pandion haliaetus*. The most common raptor, with a population in excess of 15 birds. Two active nests were found during my stay, but the behaviour of other pairs indicated that many more may have been nesting. One nest contained two chicks close to fledging, the other had two young chicks. Both nests were on the coast, one on the tip of a narrow travertine point was an elaborate "castle" of sticks, whereas the other was on sand just inland from the rocky coast and was a simple low stick platform.

WHITE-BELLIED SEA-EAGLE *Haliaeetus leucogaster*. Lipfert (1910) and Mees (1962) recorded about three pairs. I saw only three individuals, two at the north end of the island between Castle Point and Quion Bluff, and the other on the east coast opposite Cliff Point.

WEDGE-TAILED EAGLE *Aquila audax*. Lipfert (1910) recorded a nest. I saw one pair occupying the area north of Castle Point mainly around Quion Bluff, and another pair with an immature bird to the south of White Beach.

AUSTRALIAN KESTREL *Falco cenchroides*. Uncommon, but observed throughout the island.

BUSH STONE-CURLEW *Burhinus grallarius*. Two were seen near Castle Point, in a sparse thicket of low *Alyogyne cuneiformis* in the *Triodia* grassland and one in an extensive area of tall (2 m high) *Diplolaena dampieri* scrub near the west coast around Low Point.

PIED OYSTERCATCHER *Haematopus longirostris*. Uncommon. Restricted to beaches mainly along the east coast. A single nest with two young chicks was found at the north end of White Beach.

SOOTY OYSTERCATCHER *Haematopus fuliginosus*. Common. Mainly on rocky coasts especially around tidal pools.

EASTERN GOLDEN PLOVER *Pluvialis dominica*. Not previously recorded on Dorre Island, but Lipfert (1910) recorded it on Bernier Island. I saw several including one every day, at White Beach.

RED-CAPPED PLOVER *Charadrius ruficapillus*. Not previously recorded on Dorre Island, but G.C. Shortridge collected several specimens on Bernier Island (Mees 1962). Four birds in non-breeding plumage were seen every day at White Beach.

RUDDY TURNSTONE *Arenaria interpres*. Not previously recorded on Dorre Island, but was collected by G.C. Shortridge (Mees 1962), and recorded by Lipfert (1910) on Bernier Island. Frequently seen along the coast with a large flock of 50 birds at White Beach. All were in non-breeding plumage.

GREY-TAILED TATTLER *Tringa brevipes*. First record for the island. Two single birds in non-breeding plumage were seen.

BAR-TAILED GODWIT *Limosa lapponica*. First record for the island. Two birds in non-breeding plumage were observed every day at White Beach.

RED-NECKED STINT *Calidris ruficollis*. Not previously recorded on Dorre Island, but was collected by G.C. Shortridge (mees 1962), and recorded by

Lipfert (1910) on Bernier Island. Two birds in non-breeding plumage were observed every day at White Beach.

SILVER GULL *Larus novaehollandiae*. Uncommon, mainly around White Beach.

PACIFIC GULL *Larus pacificus*. Common along the coast. Usually in ones or twos. One pair observed with a well developed chick. Immature birds were quite common.

FAIRY TERN *Sterna nereis*. Rare. Only one flock of 5 birds in non-breeding plumage at White Beach.

CRESTED TERN *Sterna bergii*. Common, mainly in small flocks along the coast. A flock of approximately 70 birds observed every day at White Beach. All birds were in non-breeding plumage.

WELCOME SWALLOW *Hirundo neoxena*. Common. Usually in pairs or groups of 3 to 4. Roosts on coastal cliffs and forages over the whole island.

RICHARD'S PIPIT *Anthus novaeseelandiae*. Rare. Only three sightings, all on sandy beaches close to the edge of the coastal vegetation.

VARIEGATED FAIRY-WREN *Malurus lamberti*. The most common bird on the island. Mees' (1962) estimate of one thousand is realistic. Variegated Fairy-wrens were generally found in families of 1 or 2 males in breeding plumage, and 3-5 females, in areas with shrubs greater than 0.5 m high. These shrubs were most commonly *Alyogyne cuneiformis*, *Eucalyptus obtusiflora*, and *Diplolaena dampieri*.

Three males in breeding plumage from two adjacent territories just west of Quoin Bluff, showed aberrant colouration. Typical males have a chestnut band on the shoulders that extends across the back. The three aberrant males had a more extensive band of chestnut on the wings, and a patch of chestnut isolated in the centre of the back.

WHITE-BROWED SCRUB-WREN *Sericornis frontalis*. Uncommon. Appeared to be restricted to the tall scrub community, and the screens of tall scrub in the travertine community.

CALAMANTHUS *Sericornis fuliginosus*. Very common in the *Triodia* grassland north of White Beach, but uncommon elsewhere. Appeared to prefer the low dense vegetation in the *Triodia* grassland.

A nest of 3 eggs was found in a swale between two inland sand dunes, east of Quoin Bluff. The domed nest was situated inside a clump of *Triodia plurinervata* with an overstorey of *Alyogyne cuneiformis*.

SINGING HONEYEATER *Meliphaga virescens*. Common, but restricted to tall shrubs. Mees (1962) listed the bird as uncommon. I found this to be the case for the northern end of the island where Mees made his collections and where tall shrubs are restricted in area. However, south of White Beach tall shrubs become more common and this species becomes the most abundant bird in the area, with the exception of the Variegated Fairy-wren.

LITTLE CROW *Corvus bennetti*. Uncommon. A total of 25 birds. Corvids are notoriously difficult to identify in the field, but from my extensive observations of these birds I am confident that they were C. *bennetti*, and not

C. *ornu* as Mees (1962) believed. Storr (1985) records only C. *bennetti* on Dorre Island.

Little Crows were mainly restricted to *Diplolaena dampieri* scrub near the west coast in an area south of Low Point, but 5 birds were seen at White Beach where they stayed for several days. It is not known if they are resident.

DISCUSSION

A total of 26 species of bird were recorded during this survey. Five species namely, Eastern Golden Plover, Ruddy Turnstone, Grey-tailed Tattler, Bar-tailed Godwit, and Red-necked Stint are summer migrants to Australia and have not been recorded before on the island. Two other species, the Bush Stone-curlew and Red-capped Plover are also new records. Five species recorded by Lipfert (1910) and Mees (1962), were not observed in this survey. Of these the Australian Pelican, Barn Owl, and Spotted Harrier were probably only visitors (Mees 1962) and the Horsfield's Bronze-cuckoo *Chrysococcyx basalis* is migratory and is likely to occur on the island only during the breeding season of its hosts, Variegated Fairy-wren, White-browed Scrubwren and Calamanthus (M. Brooker *pers comm.*).

The combined records of all surveys give a total of 31 species for the island. Sixteen are Laro-Limicolae, of which 6 are summer migrants. Six are raptors and the remaining 9 are terrestrial species. Breeding has been reliably recorded in the three eagle species (Lipfert 1910, Mees 1962, and the present paper), the Horsfield's Bronze-cuckoo (Mees 1962), the Calamanthus (present paper), and two shore-birds, the Pacific Gull and Pied Oystercatcher (present paper). The Variegated Fairy-wren, the White-browed Scrubwren undoubtely breed on the island, and it is probable that the Singing Honeyeater does also.

Of the five vegetation types on the island the tall scrub community supports the highest diversity of birds. Nine species were recorded in this vegetation type. The other four vegetation types supported fewer species and most of them occurred only where taller shrubs occurred. Of the small passerines, only the Calamanthus, Welcome Swallow and Richard's Pipit appeared to use areas without tall shrubs. The Calamanthus was most common in the *Triodia* grassland, the Welcome Swallow foraged over the whole island, and the Richard's Pipit appeared to be restricted to coastal areas.

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FLOWERING CALENDAR FOR RESERVE No. 3694 IN METROPOLITAN PERTH

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ABSTRACT

A species list of vascular plants has been compiled for a 6-hectare area of remnant bushland in inner metropolitan Perth. Flowering periods of native and alien species have been recorded over a two year period with brief notes on vegetation and physical features, the correlation between flowering and rainfall, and the conservation value of the reserve are provided.

INTRODUCTION

During 1980-1981 a monthly survey was made of all vascular plant species (i.e. flowering plants and gymnosperms) conducted on Reserve No. 3694, a vacant

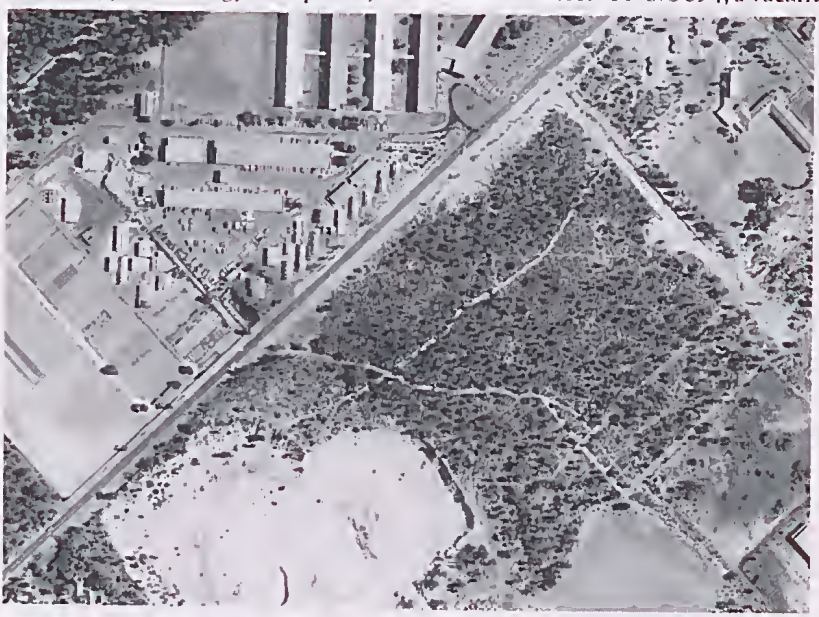

Figure 1: Aerial photograph of Western Australian Department of Agriculture complex and Reserve No. 3694.